
Conceptual Framework and Content

(Theory, occupation, treatment model, systems)

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This paper, the first of four, presents the structure and content of a model of occupation. The model is proposed as the first step in the development of a paradigm of occupation for the field of occupational therapy and is designed for application in practice and research. It draws upon the theory of open systems to build a structural framework. Concepts relevant to human occupation are integrated into this framework. Subsequent papers will add concepts to the model and demonstrate its application in clinical practice.

The field of occupational therapy is currently without a universal conceptual foundation to shape its identity and guide its practice (1, 2). Several frames of reference have been proposed as alternatives for a unifying conceptual core (2). This competition among proponents of alternative frames of reference for dominance in occupational therapy has been identified as a crisis period in the development of the field (3). Crisis is a natural and critical stage in the ontogenesis of a discipline. It results in the eventual unification of the discipline under a single paradigm (3). Paradigms in academic disciplines guide values and commitments to conceptual ideas and traditions of research. In applied fields they also determine the application of concepts to practice.

In occupational therapy the resolution of the present crisis and the eventual commitment to a single paradigm are critical for shaping the future identity of the field and the nature of its service. Consequently, such a commitment requires acknowledgment and thoughtful decision making. This paper and the three that follow are grounded in the belief that occupational therapy must select as its universal conceptual foundation a paradigm of human occupation. As pointed out by those who have advocated such a position, any other alternative will result in the failure of the field to thrive or even to survive as a unique and needed health profession (4-6).

The Nature and Use of Models

A model is a representation tool. The usefulness of a model as a tool rests on its capacity to order, categorize, and simplify complex phenomena (4). Models function to describe the organization among parts of some empirical phenomena.

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and to identify abstract characteristics and relationships that apply to a whole class of phenomena (4). Thus a model serves as a type of analogy that imparts clearer and more distinct understanding of the phenomena. Models are tools for thinking. Thinking is a skill and, like any skill, is enhanced when the person using it has the best tools available for employing the skill (7). Such skillful thinking is a caveat in the everyday clinical problem-solving of the occupational therapist and in the theorizing and research needed to validate practice.

**Models of Human Occupation.** The model presented here is preliminary and exploratory and, thus, incomplete. It will require substantial empirical validation and conceptual refinement. It is presented to stimulate, rather than confine, thinking in occupational therapy. This model is designed to provide occupational therapists with modern conceptual tools that are practically organized for theory, research, and practice. It organizes concepts of occupation into a framework based on general system theory. By so doing, the model specifies relationships among conceptual entities and describes and explains a spectrum of human behavior (occupation) that is critical to the identity and practice of occupational therapy.

The model is generated in two steps. First, an organizing framework of open systems is described. Man is conceptualized as the open system and his occupational behavior is the output of that open system. In the second step, specific concepts that explain and describe human occupation are integrated within the framework of the open system. Thus the model organizes those aspects of motivation, behavior, cognition, and so on that are relevant to understanding occupation. While the physical or biological components of occupation are acknowledged in the model, it focuses on the psychosocial and cultural aspects of occupation.

According to this model, all of human occupation arises out of an innate, spontaneous tendency of the human system—the urge to explore and master the environment. The model is based on the assumption that occupation is a central aspect of the human experience. It is Man's innate urge toward exploration and mastery and his consequent ability to symbolize that makes him unique among animals.

Society and culture are built upon and require human occupation for their maintenance just as surely as perpetuation of the species requires human sexuality. Recent trends in medicine have focused too narrowly on the inner workings of the human organism so that occupation has become misunderstood and devalued. Work and play are not merely by-products of the human essence: they are the essence of human existence.

Occupational therapy embodies an appreciation of Man's greatest capacity, the ability to explore and master his world. Occupational therapy clinics tap the deepest and most powerful adaptive response—the ability to find challenge and meaning in one's daily undertakings, one's occupation. The model expounded here is an attempt to describe and explain that central aspect of human existence and adaptation.

**Step One: The Organizing Framework**

The organizing framework specifies both the relationships between parts and the dynamics of the system as a whole. These specifications, the laws or rules by which an open system is organized, describe how the open system of occupation will operate. An open system, unlike mechanical systems, cannot be reduced to a study of its parts in isolation. In the open system, characteristics of parts and their relationships are only a portion of the explanation of the system. The integration and interrelation of the system’s parts, the dynamic interaction of the system with its environment, and the integrity of the system in the midst of constant change must also be studied (8). In the end, the system and its environment are seen as a dynamic network of inseparable relationships.

**Integration of the System’s Parts.** An open system is an organized complex of subsystems that are in dynamic interaction (8). The system is, in turn, in dynamic interaction with its environment. All parts exist, are maintained, and transformed through this dynamic interaction. In the present model, the system represents Man, and the interaction of the system with the environment is human occupation. The environment is the physical, social, and cultural setting in which the system operates.

The open system interacts with the environment by way of a process of input, output, throughput, and feedback (8). Figure 1 illustrates the process. The output consists of mental, physical, and social aspects of occupation. To produce its output, the system uses its stock of available information to organize action and predict its consequences. Input is the information that comes into the system from the environment. Without this information, the system cannot function. This information becomes a basis for the system's ability to act on the environment. The concept of feedback
This cycle makes the system self-organizing. When this incoming information is organized into the system (the subsystems are reorganized to accommodate this information), the system is changed and can produce new output. The output, of course, produces new feedback that further modifies the system. The internal organizational process in this “flow of information” is throughput. It is the interaction of input and feedback with the internal structures and functions of the system. Throughput links the other processes of input, output, and feedback and completes a cycle. This cycle makes the system self-transforming; that is, as the system produces output or acts, it creates new information that thus modifies it. Thus, the system is a collection of parts and processes in dynamic interaction. Cause and effect explanation only confuse and fragment understanding of this property of the open system. Each of the parts is integrated into total network conditions that resonate with the others in a dynamic state.

The internal parts of an open system (Figure 2) representing human occupation are conceptualized here as three hierarchically arranged subsystems. According to systems laws, the higher levels govern the lower levels. The lower levels, in turn, constrain the degrees of freedom of higher levels (10). In this model, the volition subsystem will be said to occupy the highest level. It governs the lower subsystems. Its structure consists of innate and acquired urges to act in certain ways (motivational structures). The function of this subsystem is to enact or initiate action.

The habituation subsystem represents the middle ground. Its structure includes components that arrange behavior into patterns. Its function is to regulate patterns of action that are output by the system; thus, it maintains order in the output. This subsystem is organized under the volition subsystem and is accordingly governed by the choices of that higher level subsystem.

The performance subsystem occupies the lowest level. Its structure consists of the basic capacities for action, namely, skills. It is governed by both the habituation and the volition subsystems, which enact and maintain its store of skills; thus, its function is to produce behavior that is called upon by the higher level systems.

These three subsystems organize and regulate the output of the system. Each contributes to the output in a different way. The volition subsystem has the greatest degrees of freedom; it is the level at which action is freely and consciously chosen. The habituation subsystem represents automatic and routine behavior. It regulates the output of the system into regular and predictable patterns. The performance subsystem organizes output at the lowest level, governing small patterns of skilled action. The interaction of these three subsystems and the ongoing input, throughput, output, and feedback cycles constitute the basic dynamics of the system. All of these components intermesh as the system functions over time.

Characteristics of the Environment and Dynamic Interaction with the Environment. Any open system exists in an environment. A living system cannot exist without interaction with the environment. This interaction benefits the system with both information and energy that are critical for its ongoing organization. In the model of human occupation, concern is exclusively with the input of information into the system. The importation of energy is a physiological function of the open system (e.g., eating), which need not concern a study of human occupation in any direct way.

Within the model of human occupation, the environment is conceptualized as external objects, people, and events that influence the system's action. This conceptualization of the environment is guided by Robinson's specification that the human system must process information about objects, people, and events for competency (11). Information about these three aspects of the environment enter the system as it is acted upon (input) and as it acts on the environment (feedback). This information is organized in the three subsystems and makes possible behavior that can meet the demands of the environment.

The system both changes and is changed by the environment; each shapes the other. Man creates his physical and symbolic environment at the time he learns to act competently in it. As the open system explores and masters the environment, it transforms both itself and the environment (12).

The History of Change in the System. An open system cannot be fully understood without an examination of its past experience. The system's ongoing existence is an organized continuation of change in the subsystem relationships and the relationship of the system to its environment. The integrity of the system is preserved through, and not in spite of, constant change. To understand the system, one must know its pattern of change.
Each kind of open system has a recognizable pattern of change. While the general patterns of the living system are represented in birth, life, and death, each species has its own pace, sequence of changes, and pattern of action—the qualitative aspects of how its lives. The patterns of change in the human system are largely patterns of change in human occupation. They are culturally determined to some extent; however, most societies include a pattern of childhood play, followed by an apprenticeship or student period that prepares the young member for productive participation in adult life. As the system changes through the lifespan, it must be continually reorganized so as to respond to the changing expectations and demands of the social group for occupational behavior or performance.

In the foregoing sections, human occupation was conceptualized within the framework of an open system. This framework and the properties of the open system it represents comprise a set of organizational laws of human occupation, laws that describe the organization of the model and the interrelationships of its component parts. It is important to remember that the graphic or visual illustrations of this framework have implicit in them the general laws that govern the open system, and that they are merely a shorthand representation of an entire set of laws that govern human occupation.

Step Two: The Descriptive Content of the Model of Human Occupation

Concepts that describe occupation will be discussed here as they are incorporated into the conceptual framework just presented (see Figure 1). When new concepts are incorporated, they will be integrated with concepts already introduced into the model. Thus, the discussion will be cumulative. As additional concepts are introduced, the interrelationships of all concepts should become apparent.

The Volition Subsystem. This highest level subsystem exerts a broad controlling influence over the entire system. It is primarily governed by the innate spontaneous tendency toward exploration and mastery. This is the urge that motivates occupation (12). As the system grows and changes, this global urge is differentiated and refined through experience. Central to this differentiation is the importation of information and its internal symbolic representation in the volition subsystem. Human action requires an inner symbolic model of the self as an actor in the world (13). The basic urge toward exploration and mastery of the environment, together with this growing symbolization of oneself acting in the world, constitutes the volition subsystem.

The differentiation of this subsystem is conceptualized as yielding three motivational-symbolic components: personal causation, valued goals, and interests. Personal causation refers to the image of the self as a competent or incompetent actor (14). It determines whether the system will expect success or failure and subsequently whether or not the system will enact action. Valued goals and interests reflect the pleasure associated with past experiences and future possibilities for action. They govern the type of action the system will "output."
Ontogenesis of the System

CHANGE OVER TIME
THE HUMAN SYSTEM

THROUGHPUT
Volition Subsystem

Habituation Subsystem

Performance Subsystem

ENVIRONMENT

Figure 2  The system and its environment

Valued goals are commitments to action, and interests are preferences for action. Both exert control over the volition subsystem by setting priorities among occupational activities and their consequences. Valued goals reflect the external realities of society and culture. They link occupation to society’s need for individual productive participation. Interests shape the unique aspects of occupation and underlie the variety of occupations that can satisfy the urge to explore and master the environment. The three concepts of personal causation, valued goals, and interests are proposed as the structural components of the differentiated volition subsystem making possible that subsystem’s function, to enact output.

1. Personal Causation. Personal causation grows out of the basic urge to explore and master the environment (14). Symbolically, it represents to the system its changes of success and failure when acting on the environment. This symbolic image can enhance, modify, or thwart the basic urge to explore and master. Feedback is essential to the formation of the inner symbolic image allowing the system to monitor the consequences of its action. If desired outcomes are achieved consistently, a sense of effectance and successful control over the environment develops; if not, a sense of “lack of control” develops.

The continuum from control to noncontrol is represented in two primary modes symbolizing the self as an actor—pawn and origin (14). Pawns do not believe they are in control and do not actively seek environmental challenges that would allow mastery. They see little opportunity to choose, and believe that they are controlled by circumstances outside themselves. Pawns do not enact occupation: as a result, skilled behavior that allows a sense of control does not develop. The behavior that does result in success is thought to be based on luck or chance, while failures are viewed as a result of personal incompetence and ineffectiveness.

Origins, on the other hand, are individuals who see themselves in control. They strive to explore and master the environment and seek out challenges. The origin thus develops skills to be used in upcoming situations that will increase his or her chances of success. The origins see themselves as having control as they strive toward productive behavior, gaining mastery over daily life tasks. The pawn and origin represent characterizations of persons who are either totally unable or totally able to carry out their urge toward exploration and mastery. Most individuals exist somewhere on a continuum between these two extremes. Each person’s sense of control is based on particular actions that are routinely successful and become special areas of competence. Each person’s sense of personal causation, or belief in their proven efficacy in some sphere of action, is necessary for the output of competent occupational behavior.
2. Valued Goals. Values are basic commitments to action; they organize behavior by establishing and employing an internal order of priorities and determining the importance of various occupational behaviors to the individual (15). Valued goals are a conceptualization of the way in which values guide productive behavior. Occupation is organized toward productive ends; it is not oriented to global diffuse values, but to specific valued goals. Values are serious attachments to ideas, customs, and institutions that result in an individual's feeling of being identified with a social group (15). Valued goals represent plans of action that the individual intends to pursue in order to attain productive ends. They are linked to more global values, but specify what will be accomplished and how it will occur.

The importance of valued goals for competent occupational behavior or performance is that they sustain action that might not be immediately gratifying. Less pleasurable aspects of work are made satisfying because of the ends they can accomplish or because they are part of a larger process that is intrinsically satisfying. Valued goals can operate in this fashion because they organize a sense of time. They involve an image of the self as an agent placed in time with past actions and consequences, present circumstances, and future possibilities. This image of the past, present, and future is organized into a structure of priorities yielding plans of action based on the anticipation of valued accomplishments.

3. Interests. Interests are personal dispositions to find pleasure in certain objects, events, or people (16). Interests lead to active participation in satisfying occupational activities and also serve to maintain self-initiated activity. Though less serious than values, interests attract and hold attention and determine how an individual will freely employ his or her time. Interests evolve as one acts on new opportunities or challenges that are tried and later retained or discarded according to the amount of pleasure associated with doing them. Interests place the unique stamp on people's occupation as they enact the basic tendency toward exploration and mastery. In concert with personal causation and valued goals, interests organize the enactment of occupation.

Summary. The volition subsystem consists of three components that are differentiated out of the innate global urge toward exploration and mastery of the environment. They incorporate information from experience to form internal symbolic representations of the self as an actor in the world. This symbolization of one's effectiveness (personal causation), of the importance of certain actions (valued goals), and of the pleasure from engaging in specific occupations (interests) guides the enactment of output. Belief in the efficacy, importance, and pleasure of action guides enactment of occupational behavior or performance.

The Habitation Subsystem. The habitation subsystem organizes occupational behavior or performance into patterns or routines. This subsystem consolidates the practiced choices of the volition subsystem and integrates them into predictable patterns. Two concepts are used to describe the content of this subsystem—habits and internalized roles. These components of the habitation subsystem are governed by the volition subsystem. That is, the formation of habits and roles depends on the conscious choices made on the basis of valued goals, interests, and personal causation. This habituation subsystem organizes patterns of behavior that satisfy the urge to master and explore that drives the volition subsystem. At the same time it organizes these patterns of behavior to respond to the external demands of the environment, thus maintaining action that is satisfying both to the system itself and to the environment.

1. Habits. When an individual repeats certain actions, they become automatic routines or habits (17). Habits provide an integrated consistency in the action of every day life. When they organize behavior according to social norms, habits allow the person to respond appropriately and consistently to social demands without constant conscious attention. Habits structure the use of time to achieve more efficacy in daily occupational performance.

Habits operate largely below the level of consciousness. It is only when habitual action fails that conscious decision making of the volition subsystem is needed. In the volition subsystem new courses of action can be enacted, which eventually can become new habits. As exploration yields new ways of doing things and mastery refines them through practice, new habits are formed. Since habits are automatic behaviors largely governed by unconscious feedback, they are somewhat rigid and may become maladaptive when the environment changes; for example, when the housewife's children leave home, the parent's every day habits must change. Internal changes in the system can also require habit change; for example, the active person who becomes hemiplegic after a stroke must reconstruct daily patterns of action. Over the life cycle, habits are constantly transformed as part of
normal ontogenesis. The child must learn new habits when becoming a student, and later when becoming a worker or a spouse, or when taking on any new role. For adaptation, habits must be consistent enough to organize behavior, but flexible enough to respond to external and internal changes in the system.

2. Internalized Roles. The concept of role represents a higher level of organization of behavior than habit. The routines of role behavior are larger than the routines of habit and require more complex organization. When role patterns are internalized into the habituation subsystem, the individual’s values and interests are merged with the demands of society for participation. The behaviors organized under the internalized role fulfill the demands of the social environment and satisfy the system’s urge to pursue valued goals and interests. A role includes an entire set of required behaviors that go along with occupying a position in a social group (18). During those times of the day when a person is acting within a role, its requirements serve as a framework to organize behavior.

While it is possible to conceive of several types of roles (e.g., sexual or familial roles), this model is concerned with occupational roles such as preschooler, student, housewife, worker, and retiree (19). The occupational role refers to the productive roles that determine the bulk of daily routines and thus organize most of the behavior within the system.

Occupational role behavior demands not only certain routines of skilled action, but also includes prescriptions for when they are done, in what context, with whom, and how often. The occupational role serves as a context to organize the behavior of the actor. This “contexting” is a phenomenon people experience daily as they act within a series of roles. Competent interaction with the environment is a process of effective role performance (20).

Like habit, a change in roles represents a critical adaptive process. Role change occurs in the natural context of human ontogenesis (e.g., the change from the student to worker roles). Role change may also be imposed by disability. Changing from role to role is a complex phenomenon and requires the transformation of both habits and skills and their integration into a different daily life pattern.

Summary. The habituation subsystem organizes behavior into patterns according to social norms and prescriptions for role behavior. It
also organizes behavior into automatic routines that are consistent with the volition subsystem urges toward exploration and mastery. Habits and roles are automatic routines of behavior that function to maintain behavior so that it occurs consistently and predictably. The habituation subsystem serves to integrate the individual with the environment by linking internal spontaneous urges with external environmental demands.

**Performance Subsystem.** The performance subsystem is most directly linked with the system's output. It is structurally composed of skills and functions to produce skilled action. Skilled action requires both physiological (neurological and kinesiological) and symbolic functions, with the latter superimposed organizationally on the former (21). Skills consist of flexibly organized and interrelated component actions that lead to the accomplishment of a purpose or goal under variable environmental conditions (22). Skilled action requires recognition of the features of a task and the proper means to its attainment. It also requires a means of converting that information into action and of obtaining feedback concerning the success of the action (23). Skills include not only the movement and perception required to act on the environment, but also decision making and problem solving.

Rules that govern skilled action are organized within this subsystem. These rules contain information about how to interact successfully with the environment (objects, events, and people) to achieve certain ends (11). These rules result in the organization of flexible strategies for production of action and the use of feedback to guide their operation.

Skills and the rules that organize them are not innate structures, but are acquired by both playful exploration and mastery practice (21). The rules that govern skilled action are processed largely during the long period of immaturity through child's play (22). However, throughout life, by actively engaging the environment in exploratory play, an individual can generate new skills. In adult life, serious mastery practice also serves as an important source of new skills. Both play and practice are energized by the volition subsystem's urge toward mastery and exploration.

The performance subsystem is critical to the overall adaptation of the system. Habits and roles can only build routines of behavior from pre-existing skills that are available to be organized into patterns. The volition subsystem can only enact those behaviors that the performance subsystem can produce. Thus, the configuration of skills in the performance subsystem constrains the higher level subsystems. In turn, the performance subsystem is organized by the higher level subsystems. The volition subsystem, by enacting output, determines which skills will be learned through exploration and mastery practice. The habituation subsystem organizes skills into routines for everyday life and for role performance. Those skills that are not called upon in these routines eventually become obsolete. Those which are called upon routinely become more effective. The interaction of the three subsystems is critical for determining the composition of the system's output.

**Output into the Environment**

The system's output (Figure 3) includes both information and action. The system projects information on objects, people, and events that are being or will be encountered and anticipates the results of such action. This output of information is critical for all the system's performance. It attributes meaning,
importance, relevance, and interest to the world. Such output is expressed in long time frames by goals and objectives and in short time frames by the purpose with which the world is acted upon minute by minute.

The other component of output is action. Both information and action are simultaneous outputs of the system. Action is based on the information that is being projected in time. The consequence of action is returned to and recorded in the system as new information during the feedback process. The throughput reorganizes and uses the information for subsequent output. Thus, the flow of information between the system and environment is essential to guide action.

Action and information are combined by the system to achieve results (in the use of skills) to meet expectations for performance (as organized by habits and roles) and to satisfy the system's own purposes (as contained in the volition subsystem). The output of information and action to achieve purposeful ends is occupational behavior. Purposes may be serious or playful, but they always guide occupation.

Input and Feedback from the Environment

As Man engages his environment, his occupation generates feedback to guide future behavior (Figure 4). This feedback informs the system of constraints imposed upon behavior by the physical and social world and of the consequences of various actions (24). Information which enters the system as feedback may range from that which informs it about the properties of inanimate objects to the reactions of others following one's actions. In the feedback process actual performance is compared to expected outcomes.

This process allows the system to make adjustments in its performance that, in turn, influence the organization of the system itself. Because feedback is sometimes mediated through the social system, behavior can be compared with social expectations and thus feedback serves to socialize the individual as he or she adjusts to the demands of the environment. Feedback or performance also shapes the individual's self-images and thus directly affects the personal causation component of the volition subsystem. Habits and internalized roles operate almost entirely on the basis of feedback and thereby cause actions and routines to be adjusted according to information concerning how the behavior pattern is working.
Input is information coming directly into the system from the environment. The demands of the environment comprise input to the system. Society makes demands on the system through input in the form of norms and role requirements (20). This input comes from parents, peers, and a variety of social institutions in which occupational roles are enacted. Like feedback, the input information serves to reorganize the system.

Conclusion
The first part of a model of human occupation has been presented (Figure 5). This part, the structure and content, was organized into two steps: 1. developing a conceptual framework from open systems, and 2. specifying conceptual content to describe the structure and function of the system. The resulting structure and content of the model describes Man as an occupational creature. The model is proposed as a tool for practice and research, a tool that may eventually lead to a paradigm of human occupation that will guide occupational therapy practice.

The concepts borrowed from open systems describe abstract laws that govern how any open system is organized and changed over time. The throughout of the system is made up of three subsystems that have both structure and function. The highest level governing the subsystem is the volition subsystem. Its structural components are personal causation, interest, and valued goals. These govern the system's choices for action. These choices and their subsequent triggering of action is referred to as enactment, the function of the volition subsystem. The habituation subsystem's structure is composed of habits and internalized roles; they function to maintain behavior in routine patterns. At the lowest level is the performance subsystem whose structure consists of skills; its function is to produce action. As the three subsystems interact, the volition subsystem governs the basic tendencies of the organism to act; the habituation subsystem maintains action; and the performance subsystem organizes actions into skills. These subsystems together organize the output of the system. The output is comprised of both information and action and is referred to as an occupational behavior or performance. This occupation or purposeful action generates feedback. Feedback and input are information entering the system that reorganizes the internal makeup of the system. Thus, action yields information that changes the system. This in turn makes possible new action that further changes the system. Because of this ongoing cycle, the open system is said to be self-transforming. This self-transformation is the basic process of change in the system. The explanation of change, or ontogenesis, of human occupation is a complex one requiring additional concepts to be added to the model. Two papers that follow further describe the model and present additional concepts.

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